

Work Order ID 129585-1

129585

Page 1

February-17-15 1:27:16 PM

Item ID: D2896-1

Accept

N9000040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Support

Start Date: 2/17/15

Start Qty: 12.00

12

Cust Item ID:

Required Date: 3/06/15

Req'd Qty: 12.00

12

Customer:

Reference:

Approvals:

Process Plan:

Date:

Tooling:

Date:

Run Start

NR1

QC:

Date:

SPC (Y/N):

Date:

Stop

NR2

Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D2896

C

100

0.00

100

HAAS 1

HAAS CNC vertical machine #1

HAAS CNC VERTICAL MACHINING #1

Memo

Machine as per Folio FA167

Folio Rev: AA

Dwg Rev: 2

0.00

Deburr

****Program Batch #*****

110

0.00

110

QC

Quality Control

QC1- Inspect dimensions to dimension sheet

Memo

0.00

SCRAP

P15-03-06

P1503-06

φ 3

φ 3

JFL 2015-03-03

DAS
40
9-89 15/03/14

PTO
Last page

JFL 2015-03-03

DAS
40
9-89 15/03/14

2017

Work Order ID 129585***129585***

Page 2

Item ID: D2896-1

Accept

N900040100Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Support

Start Date: 2/17/15

Start Qty: 12.00

12

Cust Item ID:

Required Date: 3/06/15

Req'd Qty: 12.00

12

Customer:

Reference:

Approvals:

Process Plan: _____

Date: _____

Tooling: _____

Date: _____

Run Start ***NR1***

QC: _____

Date: _____

SPC (Y/N): _____

Date: _____

Stop ***NR2***Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

120

QC8- Inspect parts - second check

0.00

120

QC

Memo

0.00

Quality Control

B-A 15/03/23

0

3

DAS
08
9-89

130

Identify as per dwg & Stock Location: _____

0.00

130

Packaging

Memo

0.00

Packaging

140

QC21- Final Inspection - Work Order Release

0.00

140

QC

Memo

0.00

Quality Control

MF
15-3-24

Picklist Print

February-17-15 1:27:15 PM

Page 1

Work Order ID: 129585

129585

Parent Item: D2896-1

D2896-1

Parent Item Name: Support

Start Date: 2/17/15

Required Date: 3/06/15

Start Qty: 12.00

Required Qty: 12.00

Comments:

IPP: B02.11.26Reformat; Added P/O; Added mask holeKJ

IPP Rev:C As per Rev B 07-04-16 JLM

IPP D 08.03.19 Re-format EC verified by DD

IPP REV:E

11.10.03 ASPER REV.C DD VERF:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
DSK080		Manufactured	No			100	Each	9.0000	0.5	6			

DSK080

**

D2896-1 Turning Detail

Location

Loc Qty

Loc Code

MAT060

9

104458

9

6

JFC 2015-02-26

DART AEROSPACE LTD		Work Order:	129585
Description: Support		Part Number:	D2896-1
Inspection Dwg: D2896	Rev: C	Page 1 of 1	

FIRST ARTICLE INSPECTION DIMENSION SHEET

				Record Actual Dimensions				
Dim	Min	Max	Go/No Go Gauge	1	2	3	4	5
HAAS Section								
AA	2.152	2.172		2.163	2.163	2.162	2.165	2.162
AB	2.340	2.360		2.356	2.355	2.356	2.355	2.356
AC	3.550	3.560		3.554	3.555	3.554	3.555	3.556
AD	3.770	3.790		3.773	3.774	3.784	3.782	3.783
AE	0.065 x 0.315	0.085 x 0.335		0.075x.325	0.075x.325	0.075x.325	0.075x.325	0.075x.325
AF	1.42	1.48		1.454	1.454	1.457	1.454	1.454
AG	0.833	0.853		0.847	0.842	0.845	0.844	0.845
AH	0.240	0.260		0.250	0.250	0.250	0.250	0.250
AI	0.261	0.266		0.262	0.262	0.262	0.262	0.262
AJ	0.189	0.194		0.190	0.190	0.190	0.190	0.190
AK	1.970	2.030		1.999	2.002	2.005	2.002	2.001
AL	0.625	0.630		0.626	0.626	0.626	0.626	0.626
AM	101.75	105.75		103.75	103.75	103.75	103.75	103.75
AN	0.053	0.073		0.063	0.063	0.063	0.063	0.063
AO	0.925	0.946		0.946	0.946	0.936	0.935	0.937
AP								
AQ								
AR								

Ensure that Ø0.625" bore is perpendicular to 1.764" bore within 0.005"

Accept/Reject	.001	.001	.005	.003	.001
---------------	------	------	------	------	------

Measured by: JFC / J 15-03-06	Date: 2015-03-03
--------------------------------------	-------------------------

Audited by:	Date:
--------------------	--------------

Preliminary Approval:	Date:
------------------------------	--------------

Rev	Date	Change	Revised by	Approved
A	02.12.13	New Issue	KJ/RF	
B	04.05.27	Dimension AE changed	KJ/RF	
C	06.11.22	Note added to HAAS section	KJ/JLM	
D	07.04.16	Dimsheet updated per Dwg Rev. B	KJ/JLM	
E	08.04.22	Reformat	KJ/JLM	
F	12.07.31	Dimensions updated per Dwg Rev C	KJ	

DART AEROSPACE LTD		Work Order:	129585
Description: Support		Part Number:	D2896-1
Inspection Dwg: D2896	Rev: C	Page 1 of 1	

FIRST ARTICLE INSPECTION DIMENSION SHEET

				Record Actual Dimensions				
Dim	Min	Max	Go/No Go Gauge	16	17	18	19	20
HAAS Section								
AA	2.152	2.172		2.163	2.163	2.163	2.163	2.163
AB	2.340	2.360		2.357	2.356	2.355	2.354	2.357
AC	3.550	3.560		2.555	2.556	2.556	2.555	2.558
AD	3.770	3.790		3.783	3.784	3.783	3.784	3.784
AE	0.065 x 0.315	0.085 x 0.335		0.075 x 0.325	0.075 x 0.325	0.075 x 0.325	0.075 x 0.325	0.075 x 0.325
AF	1.42	1.48		1.453	1.450	1.453	1.451	1.450
AG	0.833	0.853		0.843	0.844	0.845	0.842	0.847
AH	0.240	0.260		0.250	0.250	0.250	0.250	0.250
AI	0.261	0.266		0.262	0.262	0.262	0.262	0.262
AJ	0.189	0.194		0.190	0.190	0.190	0.190	0.190
AK	1.970	2.030		2.004	2.003	2.000	2.000	2.002
AL	0.625	0.630		0.626	0.626	0.626	0.626	0.626
AM	101.75	105.75		103.75	103.75	103.75	103.75	103.75
AN	0.053	0.073		0.063	0.063	0.063	0.063	0.063
AO	0.926	0.946		0.937	0.938	0.938	0.937	0.938
AP								
AQ								
AR								

Ensure that Ø0.625" bore is perpendicular to 1.764" bore within 0.005"

Accept/Reject 0.003 0.003 0.003 0.003 0.003

Measured by: JFE / 15-03-06	Date: 2015-03-03
Audited by:	Date:
Preliminary Approval:	Date:

Rev	Date	Change	Revised by	Approved
A	02.12.13	New Issue	KJ/RF	
B	04.05.27	Dimension AE changed	KJ/RF	
C	06.11.22	Note added to HAAS section	KJ/JLM	
D	07.04.16	Dimsheet updated per Dwg Rev. B	KJ/JLM	
E	08.04.22	Reformat	KJ/JLM	
F	12.07.31	Dimensions updated per Dwg Rev C	KJ	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width: 100%;"> <tr> <td>Skid-tube ☐</td> <td>Crosstube ☐</td> <td>Water Jet ☐</td> <td>Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>	Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐															
Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐															
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐															
Large Fab ☐	Composite ☐	Supplier ☐																

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Inspection Strip in Tube ☐ Marks/Chatter ☐ Turning Sequence ☐ Wave/Twist in Tube	General ☐ Bend ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Burrs ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Drawing ☐ Drill Holes ☐ Finish ☐ Fit/Function	☐ Folio/Program ☐ Grain ☐ Hardware ☐ Inspection Incomplete/Unqualified ☐ Instructions Incomplete/Unclear ☐ Misaligned/off center ☐ Mislabeled ☐ Misread ☐ Off-set ☐ Out of Calibration ☐ Out of Sequence
		☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Positioned Wrong ☐ Power Loss/Surge
		☐ Pressure/Forced ☐ Set-up ☐ Temperature/Cure ☐ Weld ☐ Wrong Stock Pulled ☐ Other

DART AEROSPACE LTD		Work Order:	129585
Description: Support		Part Number:	D2896-1
Inspection Dwg: D2896	Rev: C	Page 1 of 1	

FIRST ARTICLE INSPECTION DIMENSION SHEET

				Record Actual Dimensions				
Dim	Min	Max	Go/No Go Gauge	1 1	1 2	3	4	5
HAAS Section								
AA	2.152	2.172		2.163	2.163			
AB	2.340	2.360		2.355	2.347			
AC	3.550	3.560		3.559	3.557			
AD	3.770	3.790		3.787	3.786			
AE	0.065 x 0.315	0.085 x 0.335		0.065 x 0.325	0.075 x 0.325			
AF	1.42	1.48		1.453	1.453			
AG	0.833	0.853		0.845	0.835			
AH	0.240	0.260		0.250	0.250			
AI	0.261	0.266		0.261	0.261			
AJ	0.189	0.194		0.189	0.189			
AK	1.970	2.030		2.000	1.996			
AL	0.625	0.630		0.626	0.626			
AM	101.75	105.75		103.75	103.75			
AN	0.053	0.073		0.063	0.063			
AO	0.926	0.946		0.940	0.937			
AP								
AQ								
AR								
Ensure that Ø0.625" bore is perpendicular to 1.764" bore within 0.005"								
Accept/Reject				0.001	0.000			

Measured by:	JFC/15-03-06	DAS 40 9-89	Date:	2015-03-03
Audited by:			Date:	
Preliminary Approval:			Date:	

Rev	Date	Change	Revised by	Approved
A	02.12.13	New Issue	KJ/RF	
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F	12.07.31	Dimensions updated per Dwg Rev C	KJ	

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

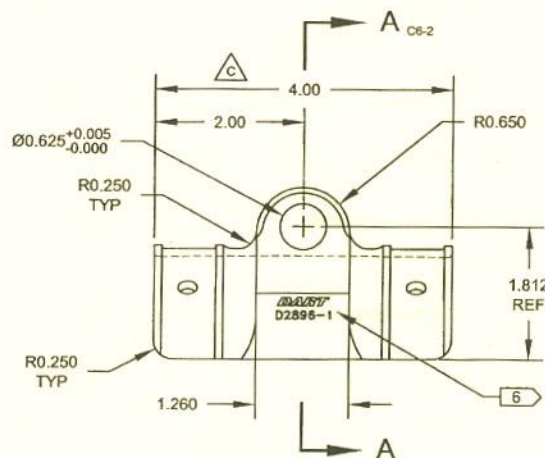
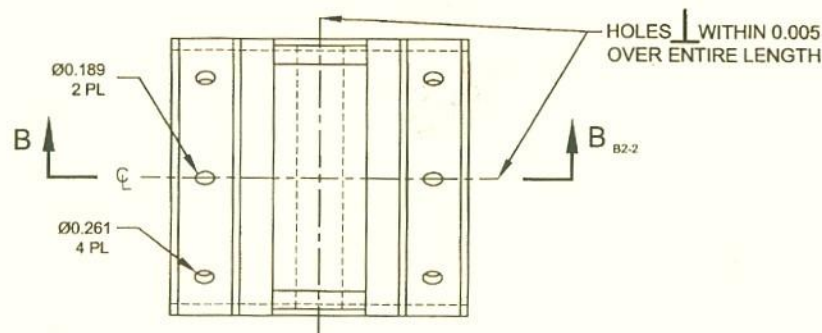
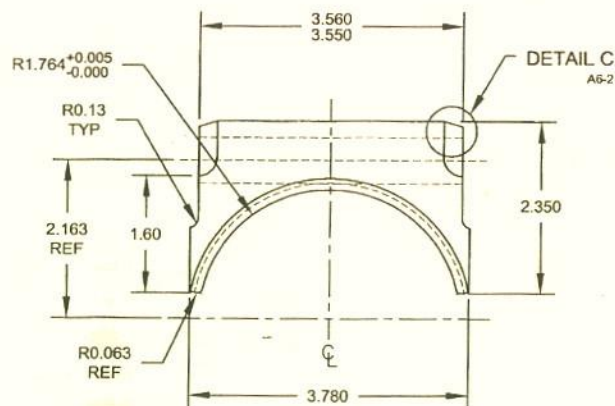
Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS <table style="width: 100%;"> <tr> <td>Skid-tube ☐</td> <td>Crosstube ☐</td> <td>Water Jet ☐</td> <td>Engineering ☐</td> </tr> <tr> <td>Machining ☐</td> <td>Small Fab ☐</td> <td>Prod. Eng. Coord. ☐</td> <td>Quality ☐</td> </tr> <tr> <td>Thermoforming ☐</td> <td>Finishing ☐</td> <td>Rec/Store/Packaging ☐</td> <td>Other ☐</td> </tr> <tr> <td>Large Fab ☐</td> <td>Composite ☐</td> <td>Supplier ☐</td> <td></td> </tr> </table>	Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐	Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐	Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐	Large Fab ☐	Composite ☐	Supplier ☐	
Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐															
Machining ☐	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐															
Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐															
Large Fab ☐	Composite ☐	Supplier ☐																

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data									
Equip/Tooling									
Handling/Pre									
Material									
Operator									
Offset/Setup									
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear	General	Other
☐ Bending	☐ Bend	☐ Folio/Program
☐ Centre Not Concentric	☐ BOM/Route	☐ Grain
☐ Cracks	☐ Broken/Damage/Defect	☐ Hardware
☐ Crimp/Kink/Ripple/Wave	☐ Burrs	☐ Inspection Incomplete/Unqualified
☐ Cuffs	☐ Contamination	☐ Instructions Incomplete/Unclear
☐ Crushing	☐ Countersink	☐ Misaligned/off center
☐ Heat Treat	☐ Cut Too Short	☐ Mislabeled
☐ Inspection Strip in Tube	☐ Drawing	☐ Misread
☐ Marks/Chatter	☐ Drill Holes	☐ Off-set
☐ Turning Sequence	☐ Finish	☐ Out of Calibration
☐ Wave/Twist in Tube	☐ Fit/Function	☐ Out of Sequence
		☐ Outside Dimensions
		☐ Over/Under tolerance
		☐ Part Incorrect
		☐ Part Lost/Missing
		☐ Part Moved
		☐ Positioned Wrong
		☐ Power Loss/Surge
		☐ Pressure/Forced
		☐ Set-up
		☐ Temperature/Cure
		☐ Weld
		☐ Wrong Stock Pulled
		☐ Other _____



D2896-1 SUPPORT

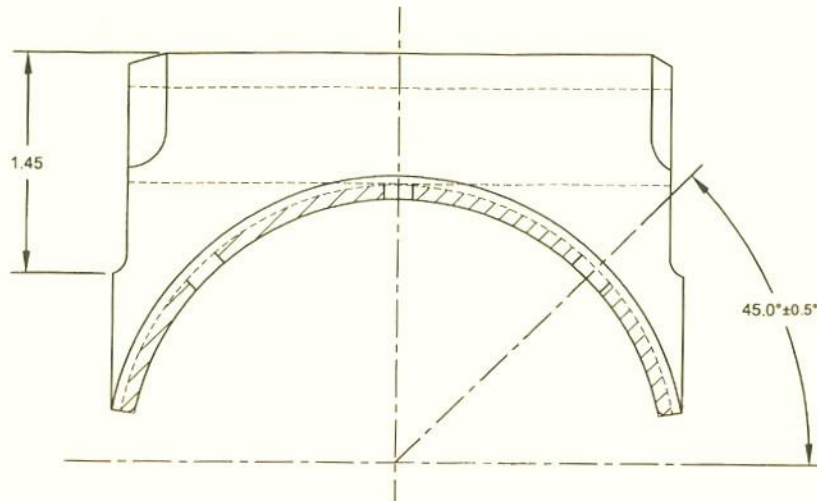
NOTES:

- 1) MATERIAL: 17-4 PH STAINLESS STEEL, H900 OR H925 CONDITION
PER ASTM A564 OR AMS 5643 OR AISI 630
MIN UTS = 170 KSI (38 HRC)
- 2) FINISH: NONE
- 3) TOLERANCES: PER DART QSI 018 UNLESS OTHERWISE NOTED
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX
- 6) IDENTIFICATION: DART LOGO AND P/N WITH 0.125 HIGH LETTERING 0.010-0.020 DEEP PER DART QSI 044 6.3
- 7) WEIGHT: 1.76 lbs

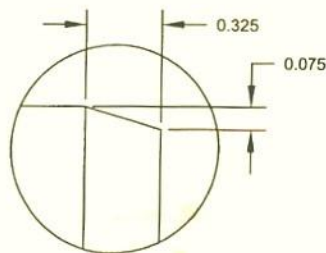
C	RMV FINISH & UPDATE MAT'L SPEC (A8-1), 2.00 WAS 2.000, 4.00 WAS 4.000 (C4-1), REFORMAT DWG	CP	11.09.07
B	INCCORP. A1-A4, FINISHING NOTES	PH	07.03.19
A	NEW ISSUE	CP	01.10.19
DESIGN		DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN			
CHECKED		DRAWING NO.	REV. C
MFG. APPR.		D2896	SHEET 1 OF 2
APPROVED		TITLE	SCALE
DE APPR.		SUPPORT	NTS
DATE	11.09.07	COPYRIGHT © 2001 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL AND IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

RELEASED
2011-09-29

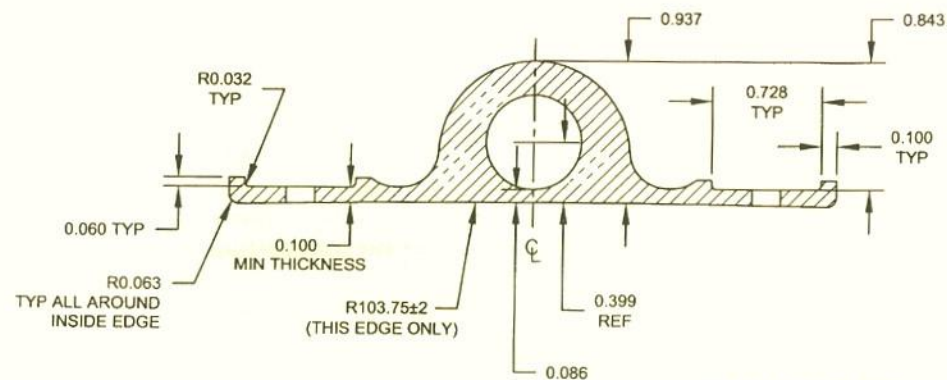
W10129585



SECTION A-A C3-1
TOOLING HOLE DETAIL
SCALE 2X



DETAIL C C6-1
SCALE 4X



SECTION B-B C3-1
SCALE 2X

RELEASED
2011-09-29

DESIGN	qp	DART AEROSPACE LTD	
DRAWN	qp	HAWKESBURY, ONTARIO, CANADA	
CHECKED	ASS	DRAWING NO.	REV. C
MFG. APPR.		D2896	SHEET 2 OF 2
APPROVED		TITLE	SCALE
DE APPR.		SUPPORT	NTS
DATE	11.09.07	COPYRIGHT © 2001 BY DART AEROSPACE LTD THIS DOCUMENT IS PRIVATE AND CONFIDENTIAL. IT IS SUPPLIED ON THE EXPRESS CONDITION THAT IT IS NOT TO BE USED FOR ANY PURPOSE OR COPIED OR COMMUNICATED TO ANY OTHER PERSON WITHOUT WRITTEN PERMISSION FROM DART AEROSPACE LTD.	

DQA:

Date: 15/05/05



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: RRM

Date: 15/05/05

Work Order update only ☐

Work Order: 129585-1	DISPOSITION Rework ☐ Scrap ☒ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS			
Part No. D2896-1		Skid-tube ☐	Crosstube ☐	Water Jet ☐	Engineering ☐
NCR No. 15-4875		Machining ☒	Small Fab ☐	Prod. Eng. Coord. ☐	Quality ☐
		Thermoforming ☐	Finishing ☐	Rec/Store/Packaging ☐	Other ☐
		Large Fab ☐	Composite ☐	Supplier ☐	

Root Cause	Date	Step	Qty	Description of work order update or non-conformance	Initial Chief Eng	Action Description	Sign & Date	Verification	QC Inspector
Design									
Doc/Data ☒	15/3/16	105	3	0.005 perpendicular dim 15 0.010.	DAS 12 9-89 15/3/16	SCRAP. CRITICAL Dim	JFC 205-3-18		
Equip/Tooling ☒									
Handling/Pre									
Material									
Operator									
Offset/Setup ☒				R.C. poor tooling and process.		→ Part will now be done in 2 ops, holes will be drilled in 1st opp which will eliminate 3rd opp and any chances to scrap further parts	15/03/18 DAS 08 9-89	15/03/18	DAS 9 9-89
Process									
Supplier									
Training									
Transport									
Unapproved									

FAULT CATEGORY

Landing Gear ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Inspection Strip in Tube ☐ Marks/Chatter ☐ Turning Sequence ☐ Wave/Twist in Tube	General ☐ Bend ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Burrs ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Drawing ☐ Drill Holes ☐ Finish ☐ Fit/Function	☒ Folio/Program ☐ Grain ☐ Hardware ☐ Inspection Incomplete/Unqualified ☐ Instructions Incomplete/Unclear ☐ Misaligned/off center ☐ Mislabeled ☐ Misread ☐ Off-set ☐ Out of Calibration ☐ Out of Sequence	☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Positioned Wrong ☐ Power Loss/Surge	☐ Pressure/Forced ☒ Set-up ☐ Temperature/Cure ☐ Weld ☐ Wrong Stock Pulled ☐ Other
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